

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7, 8, 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al. (US 2001/0032030) (IDS) in view of Schnee et al. (US 7,164,810).

Regarding claim 7, Nakahara discloses a component placement recognition mark recognizing device (see abstract) for recognizing recognition marks (e.g. see 101 and 201 in fig. 6A) for component placement that are provided corresponding to component placement positions (see 301 in fig. 6A) where components are to be placed in a plurality of partition areas (see 302 in fig. 6B) on a board (see 31 in fig. 6A), the component placement recognition mark recognizing device comprising: a recognizing camera (see 15 in fig. 3 and 21 in fig. 5) for recognizing the recognition marks linearly disposed in the plurality of areas (e.g. see 202 in fig. 6A); and a moving device (see 10 in fig. 3) for running the recognizing camera in a deposition direction (see 23-26 in fig. 5) in which the recognition marks are linearly disposed; and a controller (see 20 and 22 in fig. 5) for controlling the moving device so as to run the recognizing camera at a velocity

Art Unit: 2621

at which images of the recognition marks can be captured (see 22 in fig. 5), wherein the recognition marks are recognized with the use of the recognizing camera while the recognizing camera is run at the velocity by the moving device (see fig. 3 and P [0030]) by control of the controller.

Although Nakahara discloses controlling the velocity of the camera (see 22 in fig. 5) and capture of the images of the recognition marks into a storage unit (see 27-30 in fig. 5) and a distance between positions of the recognition marks that are adjacent to each other in the deposition direction (e.g. see distance of 202 in fig. 6A), it is noted that Nakahara does not disclose the velocity being a generally uniform velocity calculated based on a time for capture of the images and a distance between positions of the recognition marks.

However, Schnee, in the same field of endeavor, discloses an image detection system wherein the movement of the camera is based on generally uniform velocity being calculated based on a time for capture of the images and a distance between positions of the recognition marks (see "controller" in fig. 17A; see column 8, lines 54-67; see column 11, lines 7-11).

Given the teachings as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Schnee teachings of image based velocity detection into Nakahara image detection for the benefit of image based detection by velocity compensating rate distortion and jitter distortion.

Art Unit: 2621

Regarding claim 8, Nakahara does not disclose wherein the velocity at which the recognizing unit is run by the moving device is a velocity obtained from a distance between adjoining recognition marks divided by time required for capture of an image of the recognition mark.

Although it is not explicitly recited, it is conventional in the art for determining velocity by dividing a distance with time such as a distance between adjoining recognition marks divided by time required for capture of an image. The Examiner takes official notice that the calculation of velocity is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made utilize the notoriously well known calculation of velocity into Nakahara image recognizer for the benefit of synchronizing time with position based on velocity.

Regarding claim 10, the claim(s) recite analogous limitations to claim 1, and is/are therefore rejected on the same premise.

Regarding claim 15, the claim(s) recite analogous limitations to claim 1, and is/are therefore rejected on the same premise.

Response to Arguments

3. Applicant's arguments with respect to claims 7, 8, 10 and 15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD TORRENTE whose telephone number is (571) 270-3702. The examiner can normally be reached on M-F: 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2621

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Richard Torrente/
Examiner, Art Unit 2621

/Young Lee/
Primary Examiner, Art Unit 2621

RT